What is claimed is:

1.    A method for describing an image comprising the steps of:

(a)    defining a spatial structural element including a plurality of picture elements;

(b)    delineating on said image a plurality of test areas corresponding to said spatial structural element; and

(c)    quantifying a plurality of colors of each of said test areas, where said quantifying of said plurality of colors for each of said test areas is independent of the number of each of said quantified colors in each of said respective test areas.

2.    The method of claim 1 wherein said quantifying of said plurality of colors for each of said test areas is independent of the number of pixels within each of said test areas that have the same quantified color.

3.    The method of claim 1 wherein said quantifying quantizes said plurality of colors accordingly to a plurality of quantized color regions, where each of said quantized color regions includes a plurality of colors of the color space of said image.

4.    The method of claim 1 wherein the color space of said image is quantized into a plurality of quantized color regions and said plurality of colors of

each of said test areas are quantified in accordance with said quantized

color regions.

5.    The method of claim 4 wherein said quantifying of said plurality of colors

of each of said test areas provides a one-dimensional histogram.

6.    The method of claim 1 wherein said method for describing may be

described by

```
<complexType name="ColorStructureType">

  <complexContent>

    <extension base="VisualDType">

      <sequence minOccurs="1" maxOccurs="1">

        <element name="Values" minOccurs="1" maxOccurs="1">

          <simpleType>

            <list itemType="unsigned8">

              <minLength value="3/32"/>

              <maxLength value="256"/>

            </list>

          </simpleType>

        </element>

      </sequence>

      <attribute name="colorQuant" type="mpeg7:unsigned3"

use"required"/>

    </extension>
```

</complexContent>

</complexType>.

7.    The method of claim 1 where the size of said spatial structural element is selected in accordance with the size of said image.

8.    A method for describing an image comprising the steps of:

(a)    defining a spatial structural element including a plurality of picture elements;

(b)    delineating on said image a plurality of test areas corresponding to said spatial structural element; and

(c)    quantifying a plurality of colors of each of said test areas, where said quantifying of said plurality of colors for each of said test areas de-emphasizes the effect of spatial regions of coherent color and emphasizes the effect of spatially incoherent regions of colors.

9.    The method of claim 8 wherein said quantifying of said plurality of colors is independent of the number of each of said quantified colors in each of said respective test areas.

10. The method of claim 8 wherein said quantifying of said plurality of colors for each of said test areas is independent of the number of pixels within each of said test areas that have the same quantized color.

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11. The method of claim 8 wherein said quantifying quantizes said plurality of colors accordingly to a plurality of quantized color regions, where each of said quantized color regions includes a plurality of colors of the color space of said image.

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12. The method of claim 7 wherein the color space of said image is quantized into a plurality of quantized color regions and said plurality of colors of each of said test areas are quantified in accordance with said quantized color regions.

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13. The method of claim 12 wherein said quantifying of said plurality of colors of each of said test areas provides a one-dimensional histogram.

14. The method of claim 8 where the size of said spatial structural element is selected in accordance with the size of said image.

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15. A method for describing an image comprising the steps of:

(a) defining a spatial structural element including a plurality of picture elements, where the size of said spatial structural element is selected in accordance with the size of said image;
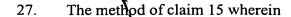
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(b)     delineating on said image a plurality of test areas corresponding to

said spatial structural element; and

(c)     quantifying a plurality of colors of each of said test areas.

16.     The method of claim 15 wherein said spatial structural element is a first

element size when said image is a first image size, said spatial structural

element is a second element size when said image is a second image size,

wherein said first element size is smaller than said second element size and

said first image size is smaller than said second image size.

17.     The method of claim 16 where said quantifying of said plurality of colors

for each of said test areas is independent of the number of each of the

quantified colors in each of said respective test areas.

18.     The method of claim 15 wherein said quantifying of said plurality of colors

for each of said test areas is independent of the number of pixels within

each of said test areas that have the same quantized color.

19.     The method of claim 15 wherein said quantifying quantizes said plurality

of colors accordingly to a plurality of quantized color regions, where each

of said quantized color regions includes a plurality of colors of the color

space of said image.

20.    The method of claim 15 wherein the color space of said image is quantized into a plurality of quantized color regions and said plurality of colors of each of said test areas are quantified in accordance with said quantized color regions.

21.    The method of claim 15 wherein said quantifying of said plurality of colors of each of said test areas provides a one-dimensional histogram.

22.    The method of claim 15 where said quantifying of said plurality of colors for each of said test areas de-emphasizes the effect of spatial regions of coherent color and emphasizes the effect of spatially incoherent regions of colors.

23.    The method of claim 15 wherein said spatial structural element is 8x8.

24.    The method of claim 23 wherein said 8x8 includes 64 samples.

25.    The method of claim 15 wherein said spatial structural element is maintained at a predetermined size and said image is sub-sampled to determine said test areas corresponding to said spatial structural element.

26.    The method of claim 25 wherein said sub-sampling is performed implicitly.

27. The method of claim 15 wherein

$$p=\max\{0,\text{round}(0.5*\log_2(\text{width}*\text{height})-8)\}$$

where

width is the width of the image;

Height is the height of the image;

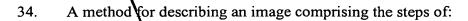K is the sub-sampling factor applied to said image,

$K=2^p$

E is the spatial extent of said spatial structural element,

$E=8*K$.

28. A method for comparing a first image to a second image comprising the steps of:

(a) defining a first spatial structural element including a plurality of picture elements;

(b) delineating on said first image a plurality of first test areas corresponding to said first spatial structural element;

(c) quantizing a first plurality of colors of each of said first test areas;

(d) re-quantizing said quantifying of step (c) to a different quantization level;

(e) defining a second spatial structural element including a plurality of picture elements;

(f) delineating on said second image a plurality of second test areas corresponding to said second spatial structural element;

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(g)    quantizing a second plurality of colors of each of said second test areas;

(h)    re-quantizing said quantizing of step (g) to said different quantization level; and

(i)    comparing said re-quantizing of step (d) with said re-quantifying of step (h).

29.    The method of claim 28 wherein said quantizing said first plurality of colors results in a first descriptor having a first number of bins and said quantizing said second plurality of colors results in a second descriptor having a second number of bins.

30.    The method of claim 29 wherein said first number of bins and said second number of bins are equal.

31.    The method of claim 29 wherein said first number of bins and the number of bins of said different quantization level are equal.

32.    The method of claim 29 wherein said second number of bins and the number of bins of said different quantization level are equal.

33.    The method of claim 28 wherein said re-quantizing includes a proper refinement.

34. A method for describing an image comprising the steps of:

(a) defining a spatial structural element including a plurality of picture elements;

(b) delineating on said image a plurality of test areas corresponding to said spatial structural element;

(c) quantizing a plurality of colors of each of said test areas;

(d) non-uniformly quantizing the resulting values of said quantizing of step (c); and

(e) converting said non-uniformly quantized values to code values.

35. The method of claim 34 further comprising said code values having a range approximately between 0.0 and 1.0 divided into six regions, where said first region is approximately between 0 and substantially zero, where said second region is approximately between substantially zero and 0.037, where said third region is approximately between 0.037 and 0.080, where said fourth region is approximately between 0.080 and 0.195, where said fifth region is approximately between 0.195 and 0.320, and said sixth region is approximately between 0.320 and 1.0.

36. The method of claim 35 wherein said first region is divided into one region.

37. The method of claim 35 wherein said second region is divided into 25 substantially equal regions.

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38. The method of claim 35 wherein said third region is divided into 20 substantially equal regions.

39. The method of claim 35 wherein said fourth region is divided into 35 substantially equal regions.

40. The method of claim 35 wherein said fifth region is divided into 35 substantially equal regions.

41. The method of claim 35 wherein said sixth region is divided into 140 substantially equal regions.

42. The method of claim 35 wherein said first region is divided into one region, wherein said second region is divided into 25 substantially equal regions, wherein said third region is divided into 20 substantially equal regions, wherein said fourth region is divided into 35 substantially equal regions, wherein said fifth region is divided into 35 substantially equal regions, and wherein said sixth region is divided into 140 substantially equal region.

43. A method for describing an image comprising the steps of:

   (a)    defining a spatial structural element including a plurality of picture elements;

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(b)     delineating on said image a plurality of test areas corresponding to said spatial structural element;

(c)     quantizing a plurality of colors of each of said test areas;

(d)     selectively re-quantizing said quantizing of step (c) to said different quantization level;

(e)     non-uniformly quantizing the resulting values of said quantizing of step (d); and

(f)     converting said non-uniformly quantized values to code values.

44.     The method of claim 43 further comprising non-uniformly quantizing the resulting values of said quantizing of step (c) if said selectively re-quantizing is not selected.

45.     The method of claim 43 wherein said quantizing said plurality of colors of each of said test areas results in values that are linearly related to the number of said spatial structural elements that contain the quantized color associated with said values.

46.     The method of claim 44 further comprising clipping said resulting values prior to said non-uniformly quantizing.

47.     The method of claim 46 further comprising converting said code values to converted values representative of said resulting values.

48. The method of claim 47 further comprising re-quantizing said converted values to a different quantization level.

49. The method of claim 48 further comprising non-uniformly quantizing said re-quantizing of said converted values.

50. The method of claim 49 further comprising converting said non-uniformly quantized values of said converted values to code values.

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